YOUR grade is based on the process as well as the final result. Show all your steps clearly so you will be eligible for the most partial credit. You may use a calculator, but no notes, books, or other students. Good luck!

1.) (5 pts.) The Intermediate Value Theorem states:

If

• \( f \) is a continuous function on the closed, bounded interval \([a, b]\), AND
• \( y \) is any number between \( f(a) \) and \( f(b) \)

Then

• for some number \( c \) between \( a \) and \( b \), \( f(c) = y \).

CIRCLE each HYPOTHESIS in the theorem.

2.) (5 pts.) Although \( f(x) = \frac{1}{x} \) is continuous on \((0, 1]\), it has no maximum value on this interval. Why doesn’t this contradict the Extreme Value Theorem?

The EVT requires \( f(x) \) to be continuous on a closed interval, such as \([0, 1]\). Since \((0, 1]\) does not contain the endpoint 0, it is not closed. Thus the EVT does not apply.